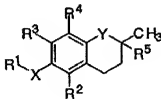


### AMENDMENT

1. (Previously presented): A method for inhibiting the growth of tumor cells in an individual comprising administering to the individual a pharmacologically effective dose of a compound having a structural formula



wherein X is oxygen;

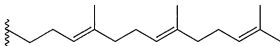
Y is oxygen, NH or NCH<sub>3</sub>;

R<sup>1</sup> is -(CH<sub>2</sub>)<sub>1-5</sub>CO<sub>2</sub>H, -(CH<sub>2</sub>)<sub>7</sub>CO<sub>2</sub>H, -CH<sub>2</sub>CONH<sub>2</sub>, -CH<sub>2</sub>CO<sub>2</sub>CH<sub>3</sub>,  
-CH<sub>2</sub>CON(CH<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub>, -(CH<sub>2</sub>)<sub>2</sub>OH, -(CH<sub>2</sub>)<sub>3</sub>NH<sub>3</sub>Cl, or -(CH<sub>2</sub>)<sub>2</sub>OSO<sub>3</sub>NHEt<sub>3</sub>;

R<sup>2</sup> and R<sup>3</sup> are independently hydrogen or R<sup>4</sup>;

R<sup>4</sup> is methyl; and

R<sup>5</sup> is



2. (Previously presented): The method of claim 1, wherein said compound is  $\alpha$ -tocotrienol,  $\gamma$ -tocotrienol or  $\delta$ -tocotrienol.

3. (Original): The method of claim 1, wherein said compound is 2,5,7,8-tetramethyl-2R-(4,8,12-trimethyl-3,7,11 E:Z tridecatrien) chroman-6-yloxy) acetic acid.

4. (Previously presented): The method of claim 1, wherein said compound induces apoptosis, DNA synthesis arrest, cell cycle arrest, or cellular differentiation in cells comprising said tumor.

5. (Previously presented): The method of claim 1, wherein said compound is administered in a dose of about 1 mg/kg to about 60 mg/kg.

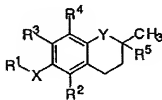
6. (Previously presented): The method of claim 5, wherein administration of said composition is oral, topical, liposomal/aerosol, intraocular, intranasal, parenteral, intravenous, intramuscular, or subcutaneous.

7. (Canceled).

8. (Previously presented): The method of claim 1, wherein said tumor cells comprise an ovarian cancer, a cervical cancer, an endometrial cancer, a bladder cancer, a lung cancer, a breast cancer, a testicular cancer, a prostate cancer, a glioma, a fibrosarcoma, a retinoblastoma, a melanoma, a soft tissue sarcoma, an osteosarcoma, a leukemia, a colon cancer, a carcinoma of the kidney, a pancreatic cancer, a basal cell carcinoma, or a squamous cell carcinoma.

9-13. (Canceled).

14. (Previously presented): A method of inducing apoptosis of a cell, comprising the step of contacting said cell with a pharmacologically effective dose of a compound having a structural formula



wherein X is oxygen;

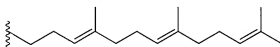
Y is oxygen, NH or NCH<sub>3</sub>;

R<sup>1</sup> is -(CH<sub>2</sub>)<sub>1-5</sub>CO<sub>2</sub>H, -(CH<sub>2</sub>)<sub>7</sub>CO<sub>2</sub>H, -CH<sub>2</sub>CONH<sub>2</sub>, -CH<sub>2</sub>CO<sub>2</sub>CH<sub>3</sub>,  
-CH<sub>2</sub>CON(CH<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub>, -(CH<sub>2</sub>)<sub>2</sub>OH, -(CH<sub>2</sub>)<sub>3</sub>NH<sub>3</sub>Cl or -(CH<sub>2</sub>)<sub>2</sub>OSO<sub>3</sub>NHEt<sub>3</sub>;

R<sup>2</sup> and R<sup>3</sup> are independently hydrogen or R<sup>4</sup>;

R<sup>4</sup> is methyl; and

R<sup>5</sup> is



15. (Previously presented): The method of claim 14, wherein said compound is  $\alpha$ -tocotrienol,  $\gamma$ -tocotrienol or  $\delta$ -tocotrienol.

16. (Original): The method of claim 14, wherein said compound is 2,5,7,8-tetramethyl-2R-(4,8,12-trimethyl-3,7,11 E:Z tridecatrien) chroman-6-yloxy) acetic acid.

17. (Canceled).

18. (Previously presented): The method of claim 1, wherein R<sup>1</sup> is -(CH<sub>2</sub>)<sub>1-5</sub>CO<sub>2</sub> or -(CH<sub>2</sub>)<sub>7</sub>CO<sub>2</sub>H.

19. (Previously presented): The method of claim 1, wherein R<sup>1</sup> is -CH<sub>2</sub>CONH<sub>2</sub>.

20. (Previously presented): The method of claim 1, wherein R<sup>1</sup> is -CH<sub>2</sub>CO<sub>2</sub>CH<sub>3</sub>.

21. (Previously presented): The method of claim 1, wherein R<sup>1</sup> is -CH<sub>2</sub>CON(CH<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub>.

22. (Previously presented): The method of claim 1, wherein R<sup>1</sup> is -(CH<sub>2</sub>)<sub>2</sub>OH.

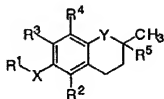
23. (Previously presented): The method of claim 1, wherein R<sup>1</sup> is -(CH<sub>2</sub>)<sub>3</sub>NH<sub>3</sub>Cl.

24. (Previously presented): The method of claim 1, wherein R<sup>1</sup> is -(CH<sub>2</sub>)<sub>2</sub>OSO<sub>3</sub>NHEt<sub>3</sub>.

25-33. (Canceled)

34. (Previously presented): The method of claim 1, wherein  $R^2$  is hydrogen.
35. (Previously presented): The method of claim 1, wherein  $R^2$  is methyl.
36. (Previously presented): The method of claim 1, wherein  $R^3$  is hydrogen.
37. (Previously presented): The method of claim 1, wherein  $R^3$  is methyl.
38. (Previously presented): The method of claim 1, wherein  $R^4$  is methyl.
39. (Canceled)
40. (Previously presented): The method of claim 1, wherein Y is  $NCH_3$ .
41. (Previously presented): The method of claim 1, wherein Y is  $NH$ .
42. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-(CH_2)_{1-5}CO_2$  or  $-(CH_2)_7CO_2H$ .
43. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-CH_2CONH_2$ .
44. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-CH_2CO_2CH_3$ .
45. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-CH_2CON(CH_2CO_2H)_2$ .
46. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-(CH_2)_2OH$ .
47. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-(CH_2)_3NH_3Cl$ .
48. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-(CH_2)_2OSO_3NHEt_3$ .
- 49-57. (Canceled)
58. (Previously presented): The method of claim 14, wherein  $R^2$  is hydrogen.
59. (Previously presented): The method of claim 14, wherein  $R^2$  is methyl.
60. (Previously presented): The method of claim 14, wherein  $R^3$  is hydrogen.

61. (Previously presented): The method of claim 14, wherein  $R^3$  is methyl.
62. (Previously presented): The method of claim 14, wherein  $R^4$  is methyl.
63. (Canceled)
64. (Previously presented): The method of claim 14, wherein Y is  $NCH_3$ .
65. (Previously presented): The method of claim 14, wherein Y is NH.
66. (Previously presented): The method of claim 1, wherein the compound has the structural formula



wherein X is oxygen;

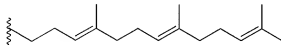
Y is oxygen, NH or  $NCH_3$ ;

$R^1$  is  $-(CH_2)_{1-3}CO_2H$ ,  $-CH_2CON(CH_2CO_2H)_2$ ,  $-(CH_2)_3NH_3Cl$ , or  $-(CH_2)_2OSO_3NHEt_3$ ;

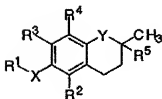
$R^2$  and  $R^3$  are independently hydrogen or  $R^4$ ;

$R^4$  is methyl; and

$R^5$  is



67. (Previously presented): The method of claim 14, wherein the compound has the structural formula



wherein X is oxygen;

Y is oxygen, NH or NCH<sub>3</sub>;

R<sup>1</sup> is -(CH<sub>2</sub>)<sub>1-3</sub>CO<sub>2</sub>H, -CH<sub>2</sub>CON(CH<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub>, -(CH<sub>2</sub>)<sub>3</sub>NH<sub>3</sub>Cl, or -(CH<sub>2</sub>)<sub>2</sub>OSO<sub>3</sub>NHEt<sub>3</sub>;

R<sup>2</sup> and R<sup>3</sup> are independently hydrogen or R<sup>4</sup>;

R<sup>4</sup> is methyl; and

R<sup>5</sup> is

